

Office Action Summary

Application No.

10/572,954

Applicant(s)

LEE, MIN-WOO

Examiner

TODD D. JACOBS

Art Unit

3746

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 15-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 15-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-945)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 1/11/2011
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/7/2010 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 15-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 states wherein the first pitch and second pitch are "different at a same round from each end of the mass part". It is unclear what "*a same round* from the mass part" means but it will be interpreted to mean that for a given round/distance away from the mass part, there is a different pitch one the first elastic part vs the second elastic part.

4. Claims 15-21 are separately indefinite because while it claim 1 there was a "predetermined pitch" for each elastic part, there are (1) pitches claimed in claims 15-21, and it is unclear if these are in reference to the predetermined pitches from claim 1 and (2) some of these pitches are variable which contradicts claim 1's "predetermined pitch" for each elastic part. For the purposes of this examination, it will be interpreted that all of the pitches in claims 15-21 are in reference to the pitch of claim 1, and further wherein the pitch of claim 1 isn't necessarily a single predetermined pitch.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Inoue et al (7,249,937).

7. In re claim 1, Inoue discloses:

- a casing (1) including a suction pipe through which a fluid is introduced from the outside and a discharge pipe through which the fluid is discharged outside and forming a predetermined internal space;
- a compressor main body (2) positioned in the casing, compressing the fluid introduced through the suction pipe with a linear reciprocating motion of a piston (unlabeled, see Fig 1) and discharging the compressed fluid through the discharge pipe,
- a supporting unit (101, and other spring units as seen in Fig 1) that includes a plurality of coil springs (101) connecting the compressor main body to the casing, plurality of coil springs includes end coils tightly wound so as to be fixed to one surface of the compressor main body and to one surface of the casing, respectively, including tightly wound upper/lower ends and a mass part (the mass part is only one of the b parts as shown in fig 2 for the 102 rejection) wherein a first/second elastic part are connected to the mass part (above the mass part as defined above and below the mass part as defined above there is a portion of the coil called a first elastic part and another called

the second elastic part) wherein the pitch of the first elastic part and the pitch of the second elastic part are different at corresponding round numbers moving away from the mass part. This is because since only one of the "b" portions of Fig 2 are considered to be the mass part, as you move away in either direction, you'll have different pitches.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in further view of either Watanabe (6,193,225), Takamura et al (5,246,215), or Kato (6,273,396).

10. In re claims 1, 15-21, Inoue discloses:

- a casing (1) including a suction pipe through which a fluid is introduced from the outside and a discharge pipe through which the fluid is discharged outside and forming a predetermined internal space;
- a compressor main body (2) positioned in the casing, compressing the fluid introduced through the suction pipe with a linear reciprocating motion of a piston (unlabeled, see Fig 1) and discharging the compressed fluid through the discharge pipe,
- a supporting unit (101, and other spring units as seen in Fig 1) that includes a plurality of coil springs (101) connecting the compressor main body to the casing, plurality of coil springs includes end coils tightly wound so as to be fixed to one surface of the compressor main body and to one surface of the casing, respectively, including tightly wound upper/lower ends and a mass part (the mass part is considered to be both "b" parts as seen in Fig 2) wherein a first/second elastic part are connected to the mass

part (above the mass part as defined above and below the mass part as defined above there is a portion of the coil called a first elastic part and another called the second elastic part) however, without taking away from the above, Inoue may fail to disclose wherein the pitch of the first elastic part and the pitch of the second elastic part are different at corresponding round numbers moving away from the mass part.

11. Nevertheless, various prior art discloses parts of one spring having a certain pitch and parts of the same spring having a different pitch. See Takamura Figs 9, 11 or 12 where the pitch increases constantly in one direction; see Kato Fig 3C where the pitch on either end of a central section are different; see Watanabe Fig 5 wherein parts A and B have different pitches. These offer varying characteristics that may be useful under some circumstances, depending on the type of spring reaction is wanted. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Inoue in view of Watanabe, Takamura or Kato by adjusting the springs as suggested above in order to achieve the advantages discussed above. Further, note that there are two ways of using each of Takamura, Watanabe and Kato; first, one could use these teachings to show a general decrease or increase from the very top end of the spring to the very bottom end of the spring; second, one could use these teachings to show a general increase/decrease on each end of the mass part. Further, note that it would have been further obvious to try other obvious variants of such an arrangement. Changing the pitch at certain locations is not a criticality in the instant application and one, during experimentation, knowing the teachings of Inoue, Takamura, Kato and Watanabe would have found it obvious to try various pitches at various parts of the spring device to further customize the apparatus and achieve the spring response wanted. Claims 15-21 were discussed in this rejection because the above applied prior art covered wherein the pitches of each spring side are "regular" yet different; wherein the pitches are increasing or

decreasing towards the mass part at (different) increasing or decreasing ratios; wherein one spring part has regular pitches that are constant and the other spring part has increasing/decreasing pitches.

Related Art

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Borlinghaus (4,077,619) and Powers (1,963,054) discloses springs with varying pitches. Hagg et al (3,058,705) discloses a similar compressor with a spring system having a similar mass part.

Response to Arguments

13. Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TODD D. JACOBS whose telephone number is 571-270-5708. The examiner can normally be reached on Monday - Friday, 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Charles G Freay/
Primary Examiner, Art Unit 3746

/TODD D. JACOBS/
Examiner, Art Unit 3746